APPENDIX D

SOURCES OF MATERIAL

Note on the System of Description.

The combination and working out of different series have been described as far as possible by formulæ rather than by words, in order to give an unambiguous and short résumé of the procedure.

I. \((1), \,(2)\ldots,\,(1,1)\ldots,\,(1,1,1)\ldots\) (figures in italics within brackets and subdivided according to the decimal system).\(^1\) Each of these symbols relates to a figure, or a series of figures over time. Its meaning is explained in the section on the variable treated, either by a formula which reduces it to other symbols, or in words. The numbering of the symbols is recommenced when the next variable is discussed.

II. \((1)_{1929}\ldots\) indicates the value of series \((1)\) in the year 1929. This way of writing is often used, especially when a series is brought on to another basis. The transformation of series \((1)\) to the basis of series \((2)\) by multiplication by a given ratio for 1929 is described as:

\[
\frac{(1) \times (2)_{1929}}{(1)_{1929}}
\]

III. \((1),\,(2)\ldots\) (thick upright figures within thick brackets, no decimal subdivision) refer to the list of sources used, given at the end of this appendix (page 235). For the reader's convenience, authors' names are mentioned in the text. The numbering is continuous for the whole of this appendix.

IV. \((3)_{1928}\) indicates the 1928 volume of the periodical publication \((3)\). (Indication of year and pages is not given for periodicals, except when more or less special tables are used, or when the series is difficult to find.)

V. Ordinary figures are used with the same meaning as elsewhere in this publication (cf. Appendix C).

\(^1\) In a few cases, these figures are in thick italics for the sake of clearness.
VI. In a few cases, upright figures in brackets are used to indicate equations; in these cases, the word “equation” is added.

VII. (Cf. Appendix A, General remarks.) Plain letters are used to indicate both deviations from average and absolute values, provided this does not lead to confusion. A single dash above a letter or a numerical symbol (ū or ī) indicates an average for 1919-1932.

In the description of the symbols, the wording is generally identical with that of the source from which the series is taken. References to periods are inclusive of the last year mentioned.

The series are described in the order of Appendix A.

A. ASSETS HELD BY INDIVIDUALS, VALUE

\[ \bar{X} = \frac{\bar{B}}{\bar{n}_{L,b}} + 0.0156 \bar{C} \]

0.0156: cf. page 33.

Au. MONETARY GOLD STOCK

Monetary gold stock of the Federal Reserve Banks; annual average of daily figures. (8)

B. LONG-TERM DEBT

B = (1) + (2) + (3).

(1) Total Private Long-term Debt. KUWIN (10), page 36.

(2) Preferred Stocks of All Corporations, Nominal Value, Average during Year.

(2) = average of two consecutive [1919-1926: (2.1) 1926-1932: (2.6)] figures of

(2.1) = (2.2) \times \frac{(2.6)_{1926}}{(2.2)_{1926}}
(2.22) Gross dividends preferred stock, all industries. King (9), page 182.

(2.23) Ditto, industries covered by (2.3).

(2.3) Par value preferred stock, 7 industries 1919-1922, 6 industries afterwards. Ibid., page 200.

(2.41) Gross dividends preferred stock, electric light and power industry. Ibid., page 182.

(2.42) Ratio gross dividend over capital, preferred stock, same industry, in 1922. Ibid., p. 203.


(3) Public Long-term Debt.

\[ (3) = (3.1) - B^p + (3.2) \]

(3.1) Public debt of the United States, June 30th (23).

(3.2) Total outstanding issues of tax-exempt securities of States, countries, cities, etc. (23930), page 204.

B^b. LONG-TERM DEBT, HELD BY BANKS (NOMINAL VALUE)

\[ B^b = 100 \frac{(1) + (2)}{(4.1)} + 100 \frac{(3)}{(4.2)} \]

(2) = (2.1)/(2.3)

(3) = (2.1) - (2)

(1) U.S. Government securities held by F.R. Banks; average of daily figures (8).
(2.1) Total investments, all banks, average of figures of three or four call dates.\(^1\) (B)

(2.2) U.S. Government obligations, member banks on Dec. 31st (ibid.).

(2.3) Total investments, member banks (ibid.).

(4.1) Average price of U.S. Government bonds, U.S. Treasury Dept. (23)

(4.2) Corporate bond price index (40 bonds). (22) page B 101.

\(\Delta B^e = (I) - (I)_{-1} + (2)_{-1} - (2)_{-2} - (3.2)_{-1} - (3.2)_{-2}\)

(1) etc.: See B.

\(\Delta B^e + \Delta B^f\): TOTAL DEBT OF FEDERAL GOVERNMENT

Increase in total interest-bearing debt of the United States Government, Dec. 31st to Dec. 31st (27).

\(B_i = B - B^b\)

\(B_i - R_i\): INDEBTEDNESS OF THE FEDERAL RESERVE MEMBER BANKS WITH THE FEDERAL RESERVE BANKS

Monthly and annual figures.

\[
B_i - R_i = \begin{cases} 
1918-1921: & (I) - (2) \\
1922-1930: & (1) \\
1931-1937: & (I) - (3) \\
(2) & = (2.1) - (2.1)_{1922} \\
(3) & = (3.1) - (3.1)_{1928} 
\end{cases}
\]

\(^1\) Interpolation of certain figures for 1919 and 1920: cf. M'.
(1) Bills discounted by the F.R.B.

(2.1) Part of (1) secured by Government war obligations; end-of-month figures, and average thereof. (8)1929, page 43, and previous issues.

(3.1) Excess reserves, all member banks. (3.1)1929 = 0.043: taken as normal excess reserves for previous years.

(1) and (3.1): average of daily figures. (8)

B₃. SHORT CLAIMS

\[ B₃ = (1) + (2) + B₃² \]

(1) Total loans, all banks; average of figures for three or four call dates. (8)

(2) Bills discounted + bills bought by the F.R.B.; average of daily figures. (8)

B₃². SHORT-TERM DEBT OF FEDERAL GOVERNMENT

Treasury bills + Certificates of indebtedness, June 30th (includes Treasury (= war) savings securities up to 1929). (23)

C. STOCK OF COMMON CAPITAL OF ALL CORPORATIONS, PAR VALUE (Middle of Year)

S. SURPLUS OF ALL CORPORATIONS (End of Year)

I. Determination of Stock of Common + Preferred Capital (C") and of S at End of Year.

Ia. 1926-1932.

\[ (C") = (C"1) + (C"2) \]

\[ (C"1) = (C"I.1) \times \left\{ 1 + (5.1) \right\} \]

\[ (C"2) = (C"I.1) \times \left\{ 1 + (5.2) \right\} \]

\[ (5.1) = \frac{\sum (5.14)_{i} (5.15)_{i}}{\sum (5.13)_{i}} \]

superscript 1 Interpolation of certain figures for 1919 and 1920: cf. M".
\[(5.14)_i = \frac{(5.11)_i}{(5.12)_i}\]

\[(5.2)\]
\[
\begin{align*}
1928 - 1932: & (5.25) \\
1926, 1927: & (5.27)
\end{align*}
\]

\[(5.25) = \frac{\Sigma i (5.24)_i (5.23)_i}{\Sigma i (5.23)_i}\]

\[(5.27) = \frac{(5.26)_{1928}}{(5.26)_{1928}}\]

\[(5.26) = \frac{\Sigma i (5.21)_i}{\Sigma i (5.22)_i}\]

**Source:** (24)

\[(C''1.1) = C''\text{ of all corporations submitting balance-sheets showing net income.}\]

\[(C''2.1) = C''\text{ of all corporations submitting balance-sheets showing no net income.}\]

\[(5.11)_i = \text{Number of corporations with net income, not submitting balance-sheets in income class } i.\]

\[(5.12)_i = \text{Total number of corporations with net income in income class } i.\]

\[(5.13)_i = \text{Total income in income class } i.\]

\[(5.21)_0, (5.22)_0, (5.23)_0, (5.24)_0: \text{ as } (5.11)_0, \text{ etc., but with deficit instead of net income.}\]

**Ib. 1919-1925.**

\[
\frac{C'' + S}{(3)} = \frac{(C'' + S)_{1926}}{(3)_{1926}}
\]

\[(4.1) = \frac{S}{C'' + S}\]

\[(4.2) = (4.1)_0 - (4.1)_{-1}\]

\[(4.2) \text{ is correlated with } Z5, 1927-1932, \text{ and then extrapolated, 1919-1926, on the basis of this relation.}\]

\[(4.1) \text{ extrapolated by using } (4.2).\]

\[S = (4.1) \times (C'' + S)\]

\[C'' = \{1 - (4.1)\} \times (C'' + S)^*\]

*The resultant percentage trend in \(C''\) is about equal to that in preferred stocks, which fits in with the fact that there is no apparent trend difference between dividends paid on both kinds of stocks (cf. Notes (3), pages 139-191).*
(3) = Total capitalisation (capital stock + surplus) of 3,144 large corporations, which made 43% of all corporations' profits in 1926. Epstein (6), page 613.

II.


$C = \frac{1}{2} \left( \frac{6.I}{(6.1)} + \frac{6.I}{(6.1)} \right)$

$\Delta C = C_{+\frac{1}{2}} - C_{-\frac{1}{2}}$

---

CI. SHARES HELD BY INDIVIDUALS

$C^I = 0.755 C$

$0.755 = \frac{\sum D}{\sum D'}$

D': cf. page 24.

---

H. CALCULATED HOARDING (H')

Residuals (since 1930) of the correlation calculation:

$M' = 0.043 (L_{in} + L_{a} + E_{Y}) - 0.076 t$

---

M. TOTAL MONEY

$M = M' + M''$

---

M'. OUTSIDE CURRENCY

1919-1934: (1)
1934-1937: (2) — (3)

(1) Outside currency, average of 12 end-of-month figures. Angell (2), pages 178-179.

(2) Money in circulation, June call date. (8)

(3) Vault cash, all banks. (3)1935, page 101, etc.

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* It has been assumed that (6.I)$_{surv} = (6.I)_{surv}$. 
M°. TOTAL DEPOSITS

Average of figures for three or four call dates.
June call date: (1).
Other call dates: \((2) \times (3)\)
\[
\begin{align*}
(2) & : 1924-1932: (2.1) \\
     & : 1919-1923: (2.2) \times (2.3)
\end{align*}
\]
(1) Total deposits. Angell (3), page 175.
(2.1) Total other than inter-bank deposits, all banks in the United States. (8)
(2.2) Ditto, all member banks. Ibid.
(2.3) Average of \(\frac{(2.1)}{(2.2)}\) at preceding and following June call date.
(3) Average of \(\frac{(1)}{(2)}\) at preceding and following June call date, weighted according to relative distance of time.

P. FEDERAL RESERVE BANKS' HOLDING OF GOVERNMENT SECURITIES, ETC.

\[
P = (1) + (2) + (3) - (4) - (5) - (6) - (7) - (8) - (9)
\]
(1) Bills bought.
(2) U.S. Government securities.
(3) Other Reserve Bank credit.
(4) Treasury cash holdings.
(5) Treasury deposits with F.R. banks.
(6) Non-member deposits.
(7) Other Federal Reserve accounts.
(8) Treasury currency outstanding.
(9) Correction on Bi - Re (rediscouts secured by Govt. war obligations, see Bi - Re).

All series: (8), yearly average of daily figures.
R. MEMBER BANKS’ REQUIRED RESERVES

Yearly average daily figures. Since 1929: \(+ 0.043\) (cf. B \(i - R\)). (8)

S. SURPLUS OF CORPORATIONS

See under C.

Z. NET INCOME OF ALL ENTERPRISES AND GOVERNMENT

\[ Z = Z^c - (1) + E_m - E^*_m + (2) + (3) \]

(1) Gains and losses on sale of capital assets, corporations (included in \(Z^c\)). 1929-1932: KUZNETS (12), page 8, n. 7; extrapolated by means of a correlation calculus with \(Z^c\) covering 1929-1935.

(2) Non-corporate business savings: Net business savings or losses of agriculture and trade. Ibid., pages 22-3.

(3) Net savings of Government. Ibid., page 8.

Z\(^c\). CORPORATION PROFITS

Statutory net income less statutory deficit.

Statistics of Income (24).

N. DEPRECIATION ALLOWANCES

\[ N = (1) + (2) \]

(2) = (2.11) + (2.12) + (2.2) + (2.3)

(1) Depreciation and depletion; Repairs, renewals and maintenance, Development expenses and fire losses. FABRICANT (7), page 3.

(2.11) Residences, rented, non-farm: depreciation + major repairs and alterations.
(2.12) Residences, rented, farm: depreciation.
(2.2) " " , owner-occupied, farm: depreciation.
(2.3) " " , unallocated: fire losses.

U. VALUE OF PRODUCTION OF CONSUMPTION GOODS
AND SERVICES

May be derived from $U'$, $w$ and $p$ with the help of the equations (1.10), (1.11), (1.12).

U'. CONSUMPTION EXPENDITURE

A. 1919-1929.

$U' = (3) All Food, Wearing Apparel and Personal Care (consisting of
(1) Non-Manufactured Food + (2) Manufactured Food, Wearing
Apparel and Personal Care) + (4) Shelter and Home Maintenance
+ (5) Other Goods and Services; (6) Corrections.

(1) Non-manufactured Food.
(1.1) Gross farm income, live-stock and live-stock products (1).
(1.2) Gross farm income, crops, fruits and nuts, and vegetables,
1919 (1929) and 1924-1932 (1931, 1933); interpolated for 1920-
1928 on (1.3) gross farm income, fruits and vegetables (1929)
multiplied by $\frac{(1.2)_{1924}}{(1.2)_{1924}}$.
(1.3) $11.74 \div 8.35 = 8.35$; 8.35 = the 1929 value of the consumption of meat, dairy products, vegetables, fruits and nuts.*
WARBURTON (28), page 178.

(2) Manufactured Food, Wearing Apparel, and Personal Care.
(2.1) Index of production of consumption goods (exclusive of automobiles). LEONG (18), page 371.
(2.2) $\times (2.3) \times (2.4)$

* This would point to a distribution margin of 40%.
(2.2) Special index of retail prices, consisting of

(2.21) Cost-of-living index, National Industrial Conference Board (25), Clothing, weight 12 (as in the Board's index).

(2.22) Same index, Food, weight 13.2 (in the Board's index: 33, but 60% — in 1929 — of total food expenditure, according to Warburton, has been taken into account under (1)).

\[ (2.4) = \frac{22.2}{(2.3)_{1920}} \quad ; \quad 22.2 = 33.96 - 11.74. \quad 33.96 = (3)_{1920} \quad \text{according to Warburton, before applying the corrections for (6.1) and (6.5) mentioned below; 11.74: cf. (1.4).} \]

(3) All Food, Wearing Apparel and Personal Care.

\[ (3.1) = (1) + (2) \]

\[ (3) = \begin{cases} 
\text{Odd years (3.2)} & \{(3.2)_{+1} - (3.1)_{+1} + (3.2)_{-1}\} \\
\text{Even years (3.1) + \frac{1}{2}} & \{(3.1)_{-1}\}
\end{cases} \]

(3.2) Warburton's estimate for (3), equally uncorrected for (6.1) and (6.5).

(4) Shelter and Home Maintenance.

\[ (4) = (4.1) + (4.2) + (4.3) \]

\[ (4.1) = (4.11) + (4.12) \]

(4.11) Rentals paid for leased non-farm homes. Lough (20), page 243.

(4.12) Rental values of homes on leased farms (Odd years: ibid.; other years: straight line interpolation).

(4.2) Home equipment and decoration. Odd years: Warburton; even years interpolated* on Output of consumers' durable finished goods, destined for domestic consumption:

\[ (4.21) \text{ Household furniture. Kuznets (16), page 38 sqq} + \]

\[ (4.32) \text{ House furnishings. Ibid.} + \]

\[ (4.33) \text{ Household machinery. Ibid.} \]

(4.3) Household supplies and operation. Odd years: as (4.2); even years interpolated* on Output of Fuel and Lighting, Gasoline and Lubricating Oils (to household consumers only). Ibid., page 18.

* Cf. formula used for (3).
(5) Other Goods and Services.

Odd years: WARBURTON; even years interpolated* on Total Consumer Expenditure on Transportation, Personal, Recreation, Health, Education and Social. DOANE (4), page 67.

(6) Corrections.

(6.1) Increases in stocks of consumers' goods, viz. \((w - w_{-1}) \frac{P}{100}\), are subtracted.

(6.2) Changes in trade margins.

\[
(6.2) = \begin{cases} 
\text{Odd years: (6.21)} \\
\text{Even years: (6.21) interpolated on (6.24)}
\end{cases}
\]

\[
(6.22) = \frac{(6.221)}{(6.222)}
\]

\[
(6.23) = (6.22) - (6.22)_{1929}
\]

\[
(6.24) = (6.23) \times \frac{(6.21)_{1919}}{(6.33)_{1919}}
\]

(6.21) WARBURTON's series for (6.2).

(6.221) Index of wholesale prices, food (23).

(6.222) Index of retail prices, food (23).

(6.3) The value of Government services paid out of the receipts from indirect taxes is subtracted.†

\[
(6.3) = (6.31) + (6.32) - (6.33)
\]

(6.31) Revenue from Customs (23).

(6.32) Miscellaneous internal revenue (23).

(6.33) Revenue from legacy and inheritance duties, included in (6.32) (23).

(6.4) \(E^*_t\) is subtracted.

(6.5) An amount of 0.2 has been subtracted in every year on account of industrial use and preparation of meals (cf. WARBURTON).

(6.6) An amount of 0.2 has been subtracted in every year on account of income from urban cows, chickens and garden plots. LEVEN c.s., (19), page 102.

* Cf. formula used for (4).
† Cf. WARBURTON (23), page 175. (The correction could only be applied for federal taxes.)
(No correction has been made for the value of imported and exported finished consumption goods; these items could not easily be segregated from Customs statistics, nor can their difference have been of great importance.)

B. 1930-1932.

Following a suggestion kindly made to the author by Mr. H. Bangæn, of the National Bureau of Economic Research, the following extrapolation has been carried out.

(7)  1930 and 1931.

\[
(7.1) = (7.3) - (7.3) \\
(7) = (7.1) \times 0.993 \\
0.993 = \frac{U'_{1929}}{(7.1)_{1929}}
\]

(7.2) Total consumption as estimated by Louck (20), page 28 (Commodities + Intangibles).

(7.3) Net rental values (imputed), ibid., page 243; straight line interpolation for 1930.

(8) 1932.

\[
(8) = (8.1) \times 1.011 \\
1.011 = \frac{U'_{1929}}{(8.1)_{1929}}
\]

(8.1) Consumers' outlay. Kuznets (17), page 85.

\[U'_C.\text{ CONSUMPTION EXPENDITURE ON DURABLE GOODS}\]

Flow of consumers' durable commodities to households and enterprises.

Kuznets (11), page 6.

\[U'_N.\text{ CONSUMPTION EXPENDITURE ON NON-DURABLE GOODS, AND SERVICES}\]

\[U'_N = U' - U'_D.\]
V. VALUE OF PRODUCTION OF INVESTMENT GOODS

(1) Flow of producers' durable commodities to enterprises +
(2) Volume of total construction.
Kuznets (II), page 96.

V'. VALUE OF PRODUCTION OF PRODUCERS' DURABLE GOODS + NON-RESIDENTIAL CONSTRUCTION

\[ V' = V - V_b. \]

V_b. VALUE OF RESIDENTIAL BUILDING

1920-1932: Value of all residential construction. Extrapolated for 1919 on \( p_a \times q_b \).
Wickens and Foster (30), page 2.

d. DIVIDENDS AS A PERCENTAGE OF CAPITAL

\[ d = \frac{(1)}{(2)} \times 100 \]

\[
(1) \begin{cases}
1922-1932: (1.1) \\
1919-1921: (1.2)
\end{cases}
\]

\[
(1.2) = D \times \frac{(1.1)_{1922-1924}}{D_{1922-1924}}
\]

(1.1) All cash dividends paid out (24).
(2) \( C + \) Preferred stock (cf. B).
l. WAGE RATE

\[ l = \begin{cases} 
1921, 1923-1932: & (1) \\
1919, 1920, 1922: & (2) 
\end{cases} \]

\[ (1) = (1.1) \times \frac{100}{(1.1)_{1929}} \]

\[ (2) = (2.1) \times \frac{(1)_{1924}}{(2.1)_{1924}} \]

(1.1) Index of hourly earnings in 25 manufacturing industries, all wage-earners (23).

(2.1) Hourly earnings in industry as a whole. Douglas (5), page 205.

\[ m_{Lb} \text{ BOND YIELD} \]

Yield in percentage, 60 issues combined (23).

\[ m_{La} \text{ SHARE YIELD} \]

\[ m_{La} = \begin{cases} 
1926-1932: & (1) \\
1919-1925: & (2) 
\end{cases} \]

\[ (2) = \text{Extrapolation on correlation calculus between } (1), \frac{d}{n'} \text{ and } t, 1926-1932. \]


\[ n' \text{ Index of the price of 90 shares (22), used in the calculation of (1).} \]

\[ m_s \text{ SHORT-TERM INTEREST RATE} \]

Annual average rate on prime commercial paper (4-6 months) in New York. Tinbergen (29), page 137.
\( m_R \). HOUSE RENT

Housing item in Bureau of Labor Statistics cost-of-living index, figures of June (1921: May) (23), brought on to basis 1929 = 100.

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D. CASH DIVIDENDS PAID OUT TO INDIVIDUALS


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E. URBAN NON-LABOUR INCOME

\[ E = D + L_e + K_1 + K_R + (E_E - E_F - E_P) + E_A. \]

---

E\(_{\text{A}}\). NET BALANCE OF INTERNATIONAL PAYMENTS

\[ E_A = (1) - (2) - (3). \]

(1) Property income payments.
(2) Dividends.
(3) Interest.

Kuznets (12), page 8.

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E\(_{\text{E}}\). ENTREPRENEURIAL WITHDRAWALS

\[ E_E = (1) + (2). \]

\[ (2) = (2.1) \times \frac{5.1}{(2.1)_{1929}} \]


(2.1) Aggregate income payments to individuals, Service + Miscellaneous industries. Ibid., page 6.

5.1: Estimated total entrepreneurial withdrawals, in $10^8, in these two industries. Ibid., page 9.

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E_F. FARMERS' CONSUMPTION EXPENDITURE

\[ E_F = (1) - E'' \]

(1) Withdrawals by farm operators. Kuznets (13), page 22.

E_F. FARMERS' CONSUMPTION OF HOME-PRODUCED GOODS

\[
E''_F = \begin{cases} 
1924-1932: (1) - (2) \\
1919-1923: \text{extrapolated on the basis of a correlation} \\
\text{calculus between } E''_F \text{ and } p_f \text{ over } 1924-1936.
\end{cases}
\]

(1) Gross income from agricultural production (23).

(2) Cash "", "", "", "", (23).

G. CAPITAL GAINS REALISED

\[
G = \begin{cases} 
1919-1929: \text{Warburton (29), page 86.} \\
1930-1932: \text{Extrapolated on equation (5.3).}^* 
\end{cases}
\]

K_I. INTEREST PAID OUT TO INDIVIDUALS BY OTHERS THAN INDIVIDUALS

\[ K_I = (1) - (2) \]

\[
(2) = (2.2) \times \frac{(2.1)_{1929}}{(2.2)_{1929}}
\]

* There is reason to assume that capital losses reported for these years seriously underestimated the losses really suffered as the statistics show losses only in cases where there is other income from which to deduct them.
(1) Interest. Kuznets (12), page 8.

(2.1) Interest on individuals' mortgages. Kuznets (15), page 184.

(2.21) Non-business interest. Leven (19), page 153.

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\[ K_R = (1) - (2) \]

\[
(2.1) : 1919-1927 \\
(2.2) : 1928 \\
(2.3) : 1929 \\
(2.4) : 1930-1932
\]

\[
(2.2) = (2.21) \times \frac{(2.1)_{1927}}{(2.21)_{1927}}
\]

\[
(2.3) = (2.31) \times \frac{(2.1)_{1927}}{(2.31)_{1927}}
\]

\[
(2.4) = (2.41) \times \frac{(2.3)_{1929}}{(2.41)_{1929}}
\]


(2) Imputed rents.

(2.1) Imputed income from owned non-farm homes. Leven (19), page 153.

(2.21) Gross income real estate and holding companies (24)_{1927}, page 331, etc.

(2.31) Rentals. Warburton (28), page 178.

(2.41) Net rents and royalties. Kuznets (14), page 5.
\[ L_{L} \quad \text{CORPORATION MANAGERS' SALARIES} \]

Total compensation of corporate officers (24).

\[ L_{L} = (1) - L_{e} \]

\begin{align*}
(1) & \quad \text{1919-1925: (1.1)} \\
(1) & \quad \text{1926-1929: (1.2)} \\
(1) & \quad \text{1930-1932: (1.3)} \\
(1.3) & \quad = (2) \times \frac{(3)_{1929}}{(2)_{1929}} \times L_{e} + (4) \\
(2) & \quad = \frac{(2.1)}{(2.2)} \\
(3) & \quad = \frac{(1) - (4)}{L_{e}}
\end{align*}

(1.1) Total salaries drawn by employees from all industries. King (9), page 138.

(1.2) Compensation of employees, salaries. Leven (19), page 155.

(2.1) Total salaries in selected industries: mining, manufacturing, construction and transportation. Kuznets (15), page 47.

(2.2) Total compensation of corporate officers in same industries. Ibid., page 50.

(4) Compensation of employees, Government service. Ibid., page 192.

\[ L_{w} \quad \text{WAGES} \]

\[ L_{w} = (1) - (2) - L_{e} \]

(1) Employees' compensation. Kuznets (12), page 8.

(2) Series (2) in the description of $E_{E}$. 
\( n \). SHARE PRICE

Annual average prices of 419 common stocks, 1926 = 100. \textit{Standard Statistics Co.} (23).
\[
n = n_{+1} - n_{-1}
\]
\( n_{+1}, n_{-1} \): Average of monthly figures of \( n \) from July to June of next year.

\( p \). COST OF LIVING


\( p_D \). PRICE OF DURABLE CONSUMPTION GOODS

Relation \((\times 100)\) between (1) flow of consumers' durable commodities to households and enterprises, \textit{current prices}, and (2) \textit{idem}, \textit{1929 prices}. \textit{Kuznets (II)}, page 6.

\( p_N \). PRICE OF NON-DURABLE CONSUMPTION GOODS, AND SERVICES

\[
p_N = \frac{p - 0.1265 p_D}{0.8735}
\]
\[
0.1265 = \frac{U_D'}{U'};
0.8735 = \frac{U_S}{U'}
\]

It makes only a negligible difference if a smaller weight, more in accordance with the composition of the cost-of-living index used, is taken for \( U_D \).

\( p' \). COST OF LIVING, EXCLUDING RENT

\[
p' = \frac{p - 0.20 m_R}{0.80}
\]
\( 0.20 \) = weight of \( m_R \) in \( p \), index used.
Further Data relating to Section (3.4):

<table>
<thead>
<tr>
<th>Commodity</th>
<th>( U_j )</th>
<th>( \varphi_j )</th>
<th>( \sigma_j )</th>
<th>( \eta_j )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>815</td>
<td>0.40</td>
<td></td>
<td>0.08*</td>
</tr>
<tr>
<td>Maize (&quot;Corn&quot;)</td>
<td>2212</td>
<td>1.00</td>
<td></td>
<td>0.48*</td>
</tr>
<tr>
<td>Oats</td>
<td>510</td>
<td>0.33</td>
<td>100</td>
<td>0.57*</td>
</tr>
<tr>
<td>Barley</td>
<td>138</td>
<td></td>
<td></td>
<td>0.47*</td>
</tr>
<tr>
<td>Rye</td>
<td>20</td>
<td>0.33\textsuperscript{1}</td>
<td></td>
<td>2.31*</td>
</tr>
<tr>
<td>Buckwheat</td>
<td>11</td>
<td></td>
<td></td>
<td>1.10*</td>
</tr>
<tr>
<td>Cotton</td>
<td>487</td>
<td>0</td>
<td>202</td>
<td>0.11*</td>
</tr>
<tr>
<td>Fruits &amp; nuts</td>
<td>576</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td>614</td>
<td>1.00</td>
<td>168</td>
<td>0.33\textsuperscript{\dagger\dagger}</td>
</tr>
<tr>
<td>Potatoes</td>
<td>401</td>
<td></td>
<td></td>
<td>0.31*</td>
</tr>
<tr>
<td>Poultry &amp; eggs</td>
<td>1101</td>
<td>1.00</td>
<td>22</td>
<td>0.80\textsuperscript{\dagger\dagger}</td>
</tr>
<tr>
<td>Dairy products</td>
<td>1894</td>
<td>1.00</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Cattle, sheep and lambs</td>
<td>1156</td>
<td>1.00</td>
<td>36</td>
<td>0.49\textsuperscript{\dagger}</td>
</tr>
<tr>
<td>Hogs</td>
<td>1329</td>
<td>1.00</td>
<td></td>
<td>0.81\textsuperscript{\dagger}</td>
</tr>
<tr>
<td>Hay</td>
<td>1040</td>
<td>1.00</td>
<td>132</td>
<td>0.55*</td>
</tr>
</tbody>
</table>

Sources:

- \( U_j \): (1)
- \( \varphi_j \): cf. section (3.4)
- \( \gamma_j \): (1)
- \* SCHULTZ (21), page 548, etc. Approximate median of 6 observations, post-war data.
- \( \eta_j \):
  - \textsuperscript{\dagger} Ibid., page 583.
  - \textsuperscript{\dagger\dagger} Estimates.

q. PRICES OF CAPITAL GOODS

\[
q = \frac{(1)}{(2)} \times 100
\]

(1) Total Flow of Finished Durable Commodities at current prices KUZNETS (11), page 6.

(2) Ditto at 1929 prices.

\textsuperscript{1} Taken as for oats.
CONSTRUCTION COSTS

ENGINEERING News-Record, annual average (23) brought on to basis 1929 = 100.

\[ f_{+t} = \left\{ (1) + (2) - (3) \right\} \times \frac{12.69}{(1) + (2) - (3)_{1929}} \]

(1) Production of agricultural products
(2) Stocks of agricultural products
(3) Exports

12.69 = value ($10^4$), in 1929, of \( (1) + \frac{1}{2} (2) - (3) \).

(1) Index of Farm Production, 1924-1929 = 100.

(2) \( (2) = \frac{(2.1)}{(2.5)} \times \frac{1.116}{(2.6)} \times \frac{(1)_{1923.5}}{(2.1)_{1923.5}} \)

\( (2.1) = \frac{(2.11) + (2.12) + (2.22)}{(2.21) + (2.22)} \)

\( 1.116 = \frac{(2.3)}{(2.5)} \times \frac{(2.21) + (2.22)}{(2.22) + (2.4) + (2.5)} \)

\( (2.3) = (2.31) \times (2.32) \)

\( (2.5) = (2.51) \times (2.52) \)

(2.11) Index stocks of raw materials, foodstuffs (Yearly average, 1923-1925 = 100), July (DEPT. OF COMMERCE) (25 1928, 1932, 1936).

(2.12) Ditto, textile materials.

(2.21) Weights of (2.11) and (2.12) in the index of commodity stocks (2.22) (25 1928), August, page 20.

(2.31) American cotton carry-over.

(2.32) Season average prices of cotton, received by farmers.
(2.4) Farm value of gross production of cotton.

(2.51) Silk imports, quantity.

(2.52) Silk price. (23)

(2.6) Gross income from farm production.

(2.31), (2.32), (2.4), (2.51), (2.52), (2.6) represent the average of the series mentioned over the years 1923-1925.

\[
(3) = (3.1) \times \frac{100}{(3.1)_{1924-9}} \times \frac{(3.2)}{(3.3)}
\]

(3.1) Index agricultural exports, 1910/11 to 1913/14 = 100.

(3.2) Value agricultural exports.

(3.3) Gross income from farm production.

(3.2) and (3.3) represent the average of the series mentioned over the years 1924-1929.

Source, except where mentioned otherwise: (1)

h. STOCK OF DWELLING-HOUSES (in $10^9$ of 1929)

\[
h = \frac{(1)}{0.142}
\]

\[
0.142 = \frac{(2)}{0.92 \left( \sum_{1920}^{1929} v_B + \frac{1}{2} (v_B)_{1930} \right)}
\]

0.92: cf. text, page 26.

(1) Number of houses, in millions. Tinbergen (26), page 156.

(2) Increase in number of houses (in millions), between the censuses of 1920 (January 1st) and 1930 (April 1st). (23)
u. QUANTITY OF CONSUMPTION GOODS AND SERVICES PRODUCED
\[ u = \frac{U}{p} \]

\[ u' = \frac{U'}{p} \]

v. QUANTITY OF INVESTMENT GOODS PRODUCED
Source as for V, but "at 1929 prices".

\[ v' = v - v_B \]

v_B. VOLUME OF RESIDENTIAL BUILDING

\[ 1920-1932 : \quad v_B = \frac{V_B}{q_B} \]

1919: Extrapolated on construction contracts awarded, floor space of buildings, residential. DODGE (29).
w. STOCK OF CONSUMERS' GOODS, QUANTITY AT END OF YEAR

\[ w = \frac{W}{p} \]

\[ W = (1) \times \frac{(2)_{1929}}{(1)_{1929}} \]

\[ (1) = \{ (1.1) - (1.1) \} \times \frac{(2)_{1920} - (2)_{1933}}{(1.1)_{1929} - (1.1)_{1933}} \times \frac{(2)_{1929}}{(1.1)_{1929}} + (1.1) \]

(1.1) Index department store stocks (25).
(2) Value of all retail stocks. CENSUS (23).

All figures, also for \( p \), at end of year or last month of year.

z. DISTRIBUTION OF INCOME

According to Pareto's law:

\[ N_x = Ax^{-a} \]

where \( N \) = number of persons with income > \( x \),
\( x \) = income (as shown by tax returns);
\( A \) and \( a \) are constants for any given moment.

Since this formula is supposed to hold good for any value of \( x \) (within a certain range):

\[ N_{r1} = Ax_{r1}^{-a} \]
\[ N_{r2} = Ax_{r2}^{-a} \]

and, by division:

\[ \frac{N_{r1}}{N_{r2}} = \left( \frac{x_{r1}}{x_{r2}} \right)^{-a} \]

\[ -a = \frac{\log N_{r1} - \log N_{r2}}{\log x_{r1} - \log x_{r2}} \]

\( x_1 = \$25,000; \ x_2 = \$100,000. \)

Source: (23).
PUBLICATIONS REFERRED TO IN APPENDIX D

(1) Agriculture, Year-Book of United States, Department of Agriculture.
    Agricultural Statistics (since 1936) United States, Department of Agriculture.


(3) Comptroller of the Currency, Annual Report of the


(8) Federal Reserve System, Annual Report of the Board of Governors of the


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(11) Kuznets, S.  

(12) "  

(13) "  

(14) "  

(15) "  
(U.S. Department of Commerce)  

(16) Kuznets, S.  

(17) "  

(18) Leong, Y. S.  

(19) Leven, M.; Moulton, H. G.; Warburton, C.  

(20) Lough, W. H.  

(21) Schultz, H.  
The Theory and Measurement of Demand, Chicago, 1938.


(24) Statistics of Income U.S. Treasury Department, Bureau of Internal Revenue.


(27) Treasury, Annual Report of the Secretary of the Treasury, Annual Report of the Secretary of the

